

Concrete Detention System Solves Site Challenges

A formerly undeveloped site near the intersection of Route 63, Philmont Avenue and Red Lion Road in lower Moreland Township, Pa., was the proposed location for a 6,000-sq-ft Super Wawa gas station and convenience store with 12 pumping stations.

The site had three significant challenges. First, it needed a storm water detention system to manage the runoff from the large parking area. Second, the site was located on a downward-graded lot adjacent to a creek and floodplain, so any solution needed to address flood control. Last, due to its proximity to residential development, it was essential that the structure be aesthetically pleasing and complement the site's appearance. The Contech design team formulated a solution to address all three issues.

The design team selected Terre Arch, a modular precast concrete storm water storage system engineered especially for underground installation. The system provided the load rating (HS-25), storage volume (277–541 cu ft per arch) and fast installation (five minutes per arch) needed on this site.

In addition, the Terre Arch system was customized to meet site conditions—specifically the grading of the site and the management of the water from the adjacent floodplain. Distribution boxes customized to act as retaining walls were constructed to keep the parking area at proposed grade level. The retaining wall, which faces the floodplain, contains openings to allow floodwater to enter the system. The storm water runoff and floodwaters are stored in the Terre Arch chambers and released at a controlled rate into the existing storm line at the street.

The retaining wall was designed with a custom finish to ensure that the structure was aesthetically pleasing, and included a custom cap, which also acted as a curb for the parking area.



“Contech provided an innovative, cost-effective solution to a floodplain challenge that enabled our development project to move forward,” said Paul Harris, construction manager for the project. “The team solved both technical and aesthetic design issues, which kept the engineers, property owners and neighbors happy.” **SWS**

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